E-SOVE

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PROGRAM AND ABSTRACTS

P43 Modelling the effect of the sterile insect technique, alone or combined with insecticide auto-dissemination, on *Aedes albopictus*

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The Sterile Insect Technique (SIT) is a demographic control procedure consisting in releasing males sterilized by ionizing radiations. A workaround technique, named boosted SIT, aims at contaminating the sterilized males with pyriproxyfen; the males would then transfer this insecticide to other compartments of the target population (females, breeding sites) through auto-dissemination. To anticipate the effect of SIT and boosted SIT on mosquito populations, they were included into an age-structured population model of *Aedes albopictus* in the geographical context of La Reunion Island. A sensitivity analysis shows that timing and duration of the male release events, as well as the quantity of sterile males released, are of key importance for both control methods. The persistence of pyriproxyfen in larval habitat appears to be the major determinant for boosted SIT to be more efficient than SIT. While the model appears a powerful tool to investigate release strategies, our findings specifically call for lab experiments towards a better assessment of pyriproxyfen transfer rates and persistence in breeding sites.